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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Mark H. Theno
Title: HYDROGEL VAPOR DISPENSER
Attorney Docket No.: 1335.001US1

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PATENT APPLICATION TRANSMITTAL

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Utility Patent Application under 37 CFR § 1.53(b) comprising:

X Specification (15 pgs, including claims numbered 1 through 39 and a 1 page Abstract).

X Informal Drawing(s) (3 sheets).

X Signed Combined Declaration and Power of Attorney (3 pgs).

Small Entity Statement (1 pg).

The filing fee has been calculated below as follows:

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SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938, Minneapolis, MN 55402 (612-373-6900)

By: J. M. Kalis
Atty: Janal M. Kalis
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As a below name inventor, I hereby declare that I qualify as an independent inventor as defined in 37 C.F.R. 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled HYDROGEL VAPOR DISPENSER described in the specification filed herewith.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 C.F.R. 1.9(c) if that person has made the invention, or to any concern which would not qualify as a small business concern under 37 C.F.R. 1.9(d) or a nonprofit organization under 37 C.F.R. 1.9(e).

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a) ☐ no such person, concern, or organization

b) ☐ persons, concerns or organizations listed below*

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I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. 1.28(b))

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Mark H. Theno

Name of Inventor

Mark H. Theno

Signature of Inventor

10/17/00

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HYDROGEL VAPOR DISPENSER

Background of the Invention

5 The present invention relates to a patch device for emitting vapor and to a method for releasing vapor.

Human beings have been using products that emit scents and aromas since ancient times. These products have been used for purposes such as masking unpleasant odors, attracting a member of the opposite sex, repelling animals and insects, and treating disease symptoms.

10 In order to extend the time of aroma emission, individuals making and using these products have dissolved or suspended the scents and aromas with other materials. For instance, perfumes are blended with volatiles that control and extend the period of evaporation of a particular scent. The Lindauer patent U.S. No. 5,234,689 issuing August 10, 1993, describes a liquid perfume substance. This substance is
15 applied to many areas of the skin. The fragrance is typically in a bottle or flask. Consequently, the user must reapply the substance.

Other formulations capture the aroma or scent material in a solid or a gel matrix. One type of solid matrix is wax in a candle. Scents and aromas within the wax are released when heated. The Nakatsu patent U.S. No. 6,086,644 issuing July 11,
20 2000, describes a scented candle. In order to emit fragrances the candle must be lit. This type of scent emission has only limited use. For instance, the candles are not transportable because of their predisposition to start fires.

Other formulations use polymeric matrices to control release of a scent or aroma. For instance, the Wick patent U.S. No. 6,010,715 issuing January 4, 2000,
25 describes a patch for controlled release of a substance. The patch includes a formulation of an active agent and a thermoplastic resin. The formulation releases active agents through the skin. The patch is strategically positioned in order to be effective. Agents released by this patch are limited to substances that are absorbable into the human body.

Summary of the Invention

One embodiment of the present invention includes a patch that comprises a main body. The main body includes a hydrogel base portion and a vapor emitting portion attached to the hydrogel base portion. A vapor emitting material is incorporated into the vapor emitting portion.

Another embodiment of the present invention includes a vapor emitting patch that includes a hydrogel and a releasable layer that is reversibly adhered to the hydrogel. A pad with a vapor emitting material incorporated into pad, is attached to the hydrogel.

One other embodiment of the present invention includes a vapor emitting patch that includes a couple of layers and a pad attached to one of the layers. The patch includes a first vapor emitting material embedded in a first portion of the pad and a second vapor emitting material embedded in a second portion of the pad.

Another embodiment of the present invention includes a kit comprising vapor emitting patches. The patches are enclosed in packaging.

The present invention also includes a method for releasing a vapor. The method includes providing a patch comprising an adhesive comprising a first surface and an opposing surface, a base substrate adhered to the opposing surface of the adhesive, and a vapor emitting portion affixed to the first surface of the adhesive. The method also includes exposing the pad to air. The method further includes releasing the vapor.

Description of the Drawings

Figure 1 is a cross-sectional view of a patch of the present invention.

Figure 2 is a top view of the base portion.

Figure 3 is a top view of the patch of the present invention.

Figure 4 is a view of the back side of a patch with the base substrate attached to the patch, wherein the base substrate is partially detached from the patch.

Figure 5 is a back view of the opposing surface of the adhesive.

Figure 6 is a top view of the top surface of the pad.

Figure 7 is a back view of the bottom surface of the pad.

Figure 8 is a top plan view of a pad embodiment that incorporates two scents.

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Detailed Description

The vapor emitting patch of the present invention, one embodiment of which is illustrated generally at 100 in Fig. 1, includes a main body 10 that comprises a base portion 101 and a vapor emitting portion 150, wherein the vapor emitting portion 150 is affixed to the base portion 101 by an adhesive 114. The base portion comprises a hydrogel base substrate 120, and a release layers 123a and 123b that releasably expose the hydrogel base substrate 120. The vapor emitting portion 150 includes a cellular main body 152 and a protective mesh 156 that overlays the cellular main body 152. Vapor emitting substances are incorporated within the cellular main body 152.

For some embodiments, the vapor emitting portion 150 comprises an open cellular pad 152 that incorporates a vapor emitting material 154, and, for some embodiments, a mesh or netting 156 positioned on a top surface of the open cellular pad 152. Vapor emitting materials 154 usable in the present invention include a variety of materials that emit vapors at ambient temperatures and pressures, such as perfumes, drugs, and pheromones.

The patch 100 is attachable to skin and non-living materials by an adhesion of the hydrogel base portion 120 to skin and to other non-living surfaces once the release layer 123a is removed. For some use embodiments, the patch 100 is adhered to a surface once the release layer 123b is removed.

The patch 100 is transportable. The shape and structure of the patch 100 are adaptable for use in a variety of environments. The patch 100 may be positioned so that the vapor emitting portion 150 is positioned either outward into an environment or inward, facing a surface.

The patch of the present invention 100 comprises at least one reservoir of vapor emitting material. For some embodiments, the vapor emitting portion includes many cells for receiving a vapor emitting substance. The vapor emitting material may be the sole material in the reservoir or, for some embodiments, the reservoir may include a blend or mixture of vapor emitting material and other liquid or gel materials. The other materials act as carriers that orchestrate release of scents. For instance, one vapor emitting substance is incorporated in a carrier with a very high vapor pressure and another vapor emitting substance is incorporated in a carrier with a very low vapor pressure. For some embodiments, the same vapor emitting substance is incorporated in carriers having a spectrum of vapor pressures. The use of a spectrum of carriers along with an incorporation in a large number of air cells prolongs the release of a substantially constant quantity of vapor. For some embodiments, it is a single vapor that is released. For other embodiments, two or more vapors are sequentially released or, for other embodiments, concurrently released.

By using the patch 100, an individual senses a scent or aroma that is continuously released for a prolonged period of time. By using the patch 100, the user does not have to apply the vapor emitting material repeatedly to the skin or a user. This is an improvement over a lotion or spray wherein vapor emitting material is rapidly released and must be frequently reapplied.

The patch 100 is manufactured, for a variety of embodiments, with materials having various colors. The patch 100 may be flesh colored so as not to be readily seen. The patch 100 may be made with a bright vibrant color to attract attention. The patch 100 may also be made in a wide variety of sizes and shapes, depending upon the application.

Embodiments of the patch 100 are fabricated to accommodate many different uses. For instance, a patch incorporating an animal scent is usable by a hunter. The hunter may wear the patch 100 or may affix the patch 100 to a surface. The purpose of this type of patch is to attract an animal.

A patch incorporating both an animal scent and an insect repellent is also

usable. For this embodiment, the cellular pad 152 incorporates a solution or mixture of an animal scent and insect repellent. These scents are concurrently released. In another embodiment, the patch 100 comprises a cellular pad 152 with an animal scent 204 localized in one portion of the pad and an insect repellent 206 localized in another portion of the pad. This embodiment is illustrated at 200 in Fig. 8.

In another embodiment, the patch 100 incorporates a cosmetic fragrance, such as a perfume or cologne. The patch embodiment may be affixed to the body of a user in a location that is hidden from view. This patch embodiment permits a user to have the benefits of a fragrance without detrimental effects, such as a staining of clothing, as is caused by oil based scents. This embodiment also provides the user with a longer period of vapor releasing effectiveness.

Some embodiments of the patch incorporate a medicinal vapor emitting material. For example, if vapor rub menthol gel is the substance incorporated, the patch 100 is usable to relieve coughing and congestion. For this embodiment, the patch 100 is generally applied to part of a human body. Other medicinal vapor emitting materials embedded in the pad to treat a wide range of ailments include aroma therapy products. These are only some of the uses of the patch 100. A wide variety of vapor emitting materials can be stored in the vapor emitting portion.

Active agents include psychoactive agents such as nicotine, caffeine, mesocarb, mefexamide, cannabinoids, such as THC and the like; sedatives such as deazepam, mepiridine, uldazepam, tybamate, and metaclazepam; and antibiotics such as tetracycline and penicillin.

For some embodiments, vapor emitting material 154 is located on the top surface 152a of the cellular pad 152, as shown in the top view of vapor emitting portion in Figure 6.

A kit embodiment of the present invention, illustrated generally at 300 in Fig. 9 includes a package 302 and the patch 100, which is enclosed within the package. When the patch 100 is removed from the package 302, and the pad 152 of the patch 100 is exposed to air, the vapor emitting material 154 is released into the air. The vapor

emitting material 154 includes materials such as perfume, cologne, animal scents, insect repellants, vapor rub menthol gel, aroma therapy, and many others.

The cellular foam pad 152 receives, retains, and releases vapor emitting material 154. The cellular structure of the pad permits a gradual and substantially constant release of vapor emitting material. In particular, cells within the pad 152 store the vapor emitting material 154 and release vapor in accordance with the local vapor pressure within the cellular structure of the pad and at the interface of the pad 152 and atmosphere.

In one embodiment, the pad 152 is made from a synthetic foam material. Other pad materials include natural foam or other foam materials. It is believed that open cellular structures are generally usable. The open cellular structures are made of materials such as polyolefins, acrylic adhesives as well as hydrogels. In one embodiment, the pad 152 is rectangularly shaped. In other embodiments, the pad 152 comprises shapes, such as circular, triangular, oval, and hexagonal shapes. In one embodiment, the pad 152 has a thickness 152t of about 0.4 centimeters and is located in the center of film layer 112. In other embodiments, the pad 152 can have a thickness 152t of about less than 0.1 centimeters, less than about 1.0 centimeter, less than about 5.0 centimeters, or less than about 10.0 centimeters. Some embodiments of the pad 152 omit one or more of these features. Thus, the pad 152 is not limited to any particular dimensional selection, location, color, or composition. Embodiments of the patch have a capability to be very thin.

In one embodiment the protective member 156 is a netting material that is ultrasonically sealed to the pad 152. In other embodiments the protective member 156 is formed from materials such as mesh or scrim and is attached to the pad 152 by other mechanisms. The protective member 156 does not cover the entire top surface 152a of the pad 152, and thus allows the vapor emitting material 154 to be released into the air. The protective member 156 prevents objects from coming into contact with the pad 152, where the vapor emitting material 154 is located, as illustrated in the top view

of the patch 100 in Fig. 3. The protective material 156 is not limited to any particular material, size, shape or color.

The base portion 101 comprises the release layer 123b, the hydrogel 114, and the release layer 123a. The vapor emitting portion 150 is affixed to the base portion 101, which is used to attach the patch 100 to skin and non-living materials. Some embodiments omit one or more of the release layers 123a and 123b.

The release layer 123b is affixed to a first surface 114a of the hydrogel. The release layer 123b allows the pad 152 to be attached directly to the first surface 114a of the hydrogel 114 while also protecting the first surface 114a of the hydrogel 114 from adhering to any undesirable object. In one embodiment, the release layer 123a is fabricated to form a rectangular shaped piece of film. A portion of the release layer 123b is removed, and therefore an area of the first surface 114a of the hydrogel 114 is not covered by the film layer 123b, as shown in the top view of the base portion in Fig. 2. This area is the adhesive section 114s. The portion of the film layer is removed in order to affix the pad 152 directly to the adhesive 114, as shown in Fig. 1.

In various embodiments the release layers 123a and 123b include polyolefins, polyamides, polyethylene terephthalates, cellulose, paper, foil or any combination thereof. In one embodiment the film layer 123b has a length 112l of about 7.0 centimeters and a width 112w of about 6.0 centimeters. However, in other embodiments the film layer 123b can have a length or width of about less than 1.0 centimeter, less than about 10.0 centimeters, less than about 25.0 centimeters, or less than about 100.0 centimeters. The film layer 123a is not limited to any particular material, size, shape, or color.

The hydrogel 114 is attachable to skin and can also be attached to non-living materials such as a wall, a window, a desk, a refrigerator, a car, a bag, and many others, once the release layer 123a or 123b is removed.

The release layers 123a and 123 b are attached directly to the hydrogel 114, as shown in the cross-sectional view of Fig. 4. The release layers 123a and 123b prevent the opposing surface 114b of the adhesive 114 from being attached to a surface

prior to its intended use. The release layers 123a and 123b are removable and flexible. Once the patch 100 is ready to be used, the release layer 123a or 123b is removed from the hydrogel. If desired, the release layer 123a and 123b is reattached to the opposing surface 114b of the hydrogel 114, once removed.

5 The release layers 123a and 123b are typically made of any suitable material that is flexible, easily removed, and that can be attached and reattached to the opposing surface 114b of the adhesive 114.

 In one embodiment the release layer 123a has a length 120l of about 7.0 centimeters and a width 120w of about 6.0 centimeters. However, in other
10 embodiments the release layer 123a has a length or width of about less than 1.0 centimeter, less than about 10.0 centimeters, less than about 25.0 centimeters, or less than about 100.0 centimeters. The release layer 123a is not limited to any size, shape, or color.

 The illustrative patch 100 and other patches can be made using several
15 techniques. One method of making the patch is to cut a piece of the hydrogel 114 in the shape desired for the patch 100. The hydrogel 114 can be cut using a scalpel, a knife, a machine with a cutting device, or any other suitable cutting device. Next, a piece of a pad 152 is cut into the desired size. Then, a piece of film 112 is cut in the same shape as the hydrogel 114 using a scalpel, a knife, a machine with a cutting device, or any
20 other suitable apparatus for cutting film. The pad 152 is then placed on top of the release layer 123b for sizing. An area equivalent to the perimeter of the pad 152 is cut out of the release layer 123b. The release layer 123b is adhered to the hydrogel 114. The area where the film was cut out exposes the hydrogel 114.. The exposed hydrogel 114 allows the pad 152 to be affixed directly to the hydrogel 114. The patch 100 is
25 mass producible using conventional manufacturing techniques.

 The release layers 123a and 123b are also cut into the same shape as the hydrogel 114. The release layers 123a and 123b are adhered to the hydrogel 114. Vapor emitting material is added to the pad or foam material of the vapor emitting portion 150. Then, the protective material 156 is cut into the same shape as the pad or

foam material 152. The protective material 156 is then ultrasonically sealed to the top surface 152a of the pad 152. The pad 152 is then affixed directly to the hydrogel 114 by placing it directly on the adhesive section 114s, the exposed area of the hydrogel 114 where the release layer 123b that has been cut out.

5 Finally, the patch 100 is placed in packaging. For some embodiments, the packaging comprises a plastic sealed bag or a box that contains one patch. The patches are, for some embodiments, wrapped individually or with other patches. The patches are, for other embodiments, packaged in a kit with other devices. For example, a kit can contain a patch without the vapor emitting material 154 and a separate bottle or
10 container with either one or more vapor emitting materials 154.

 The following detailed description, which references and incorporates Fig. 1- 7, describes and illustrates one or more specific embodiments of the invention. These embodiments, offered not to limit but only to exemplify and teach the invention, are shown and described in sufficient detail to enable those skilled in the art to practice
15 the invention. Thus, where appropriate to avoid obscuring the invention, the description may omit certain information known to those skilled in the art.

IN THE CLAIMS

What is claimed is:

1. A vapor emitting patch comprising:
a hydrogel base portion;
a vapor emitting portion attached to the base portion; and
a vapor emitting material incorporated into the vapor emitting portion.
2. The patch of claim 1 wherein the base portion comprises a hydrogel.
3. The patch of claim 2 wherein the base portion further comprises a film layer wherein the film layer reversibly adheres to the hydrogel.
4. The patch of claim 3 wherein the film layer is removable.
5. The patch of claim 1 wherein the vapor emitting portion comprises a pad.
6. The patch of claim 5 wherein the pad comprises a cellular material selected from a group comprising polyolefins, acrylic adhesives and hydrogels.
7. The patch of claim 5 wherein the vapor emitting portion comprises a protective material that overlays the pad.
8. The patch of claim 7 wherein the protective material comprises a mesh material or a non-woven material.
9. The patch of claim 1 wherein the vapor emitting portion comprises a vapor emitting material.

10. A patch comprising:
a hydrogel comprising a first surface and an opposing surface;
a releasable layer adhered to the hydrogel;
a pad comprising a top surface and a bottom surface wherein the bottom surface of the pad is affixed to the hydrogel; and
a vapor emitting material incorporated into the pad.
11. The patch of claim 10 wherein the pad comprises a cellular material.
12. The patch of claim 10 and further comprising a protective member sealed to the top surface of the pad.
13. The patch of claim 10 further comprising a film layer wherein the film layer is attached to the hydrogel.
14. The patch of claim 13 wherein the film layer comprises a material selected from the group consisting of polyolefins, polyamides, cellulose, paper, foil, and polyethylene terephthalates, or any mixture thereof.
15. The patch of claim 10 wherein the vapor emitting material includes a perfume or cologne.
16. A patch comprising:
a first layer comprising a first surface and an opposing surface;
a second layer adhered to the opposing surface of the first layer;
a pad comprising a top surface and a bottom surface wherein the pad is attached to the first surface of the first layer;
a first vapor emitting material embedded in a first portion of the pad; and
a second vapor emitting material embedded in a second portion of the pad.

17. The patch of claim 16 further comprising a third layer wherein the third layer is affixed to the first surface of the first layer;

18. The patch of claim 16 further comprising a protective layer wherein the protective layer is attached to the top surface of the pad.

19. The patch of claim 16 wherein the first layer comprises a pressure sensitive adhesive.

20. The patch of claim 19 wherein the pressure sensitive adhesive comprises hydrogel.

21. The patch of claim 17 wherein the third layer comprises a film layer.

22. The patch of claim 21 wherein the film layer comprises a material selected from the group consisting of polyolefins, polyamides, cellulose, paper, foil, polyethylene terephthalates, or any mixture thereof.

23. The patch of claim 16 wherein the second layer comprises a removable base substrate.

24. The patch of claim 16 wherein the pad comprises a synthetic or natural foam or other open cellular material such as polyolefin, acrylic adhesive, or hydrogel.

25. A method for releasing a vapor, comprising:
providing a patch comprising an adhesive comprising a first surface and an opposing surface, a base substrate adhered to the opposing surface of the adhesive, and a vapor emitting portion affixed to the first surface of the adhesive;

removing the base substrate;
attaching the adhesive to a surface;
exposing the pad to air; and
releasing the vapor.

26. The method of claim 25 wherein attaching the adhesive to a surface comprises attaching the adhesive to skin.

27. The method of claim 25 wherein removing the base substrate comprises removing the base substrate from the opposing surface of the adhesive.

28. The method of claim 25 wherein exposing the pad to air includes removing the patch from a packaging.

29. A method for releasing a vapor comprising:
providing a patch comprising an adhesive comprising a first surface and an opposing surface, a base substrate adhered to the opposing surface of the adhesive, and a vapor emitting portion affixed to the first surface of the adhesive;
exposing the pad to air; and
releasing the vapor.

30. The method of claim 29 wherein providing a patch includes removing the base substrate and attaching the adhesive to a surface.

31. The method of claim 29 wherein exposing the pad to air includes removing the patch from a packaging.

32. The device of claim 11 wherein the vapor emitting material includes a perfume or cologne.

33. The device of claim 11 wherein the vapor emitting material includes an insect repellent.
34. The device of claim 11 wherein the vapor emitting material includes a vapor rub menthol gel.
35. The device of claim 11 wherein the vapor emitting material includes an animal scent.
36. The device of claim 10 wherein the vapor emitting material includes an aroma therapy substance.
37. The device of claim 10 wherein the vapor emitting material includes an air freshener.
38. A kit for releasing a vapor comprising:
one or more patches comprising a hydrogel and a vapor emitting material adhered to the hydrogel; and
a container for enclosing the patches.
39. The kit of claim 38 and further comprising a container for enclosing more than one patch.

ABSTRACT

The present invention includes a patch. The patch includes a main body with a base portion and a vapor emitting portion. The base portion includes a hydrogel comprising a first surface and an opposing surface. The vapor emitting portion is
5 attached to the first surface of the hydrogel. A vapor emitting material is incorporated in the vapor emitting portion.

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Fig. 1

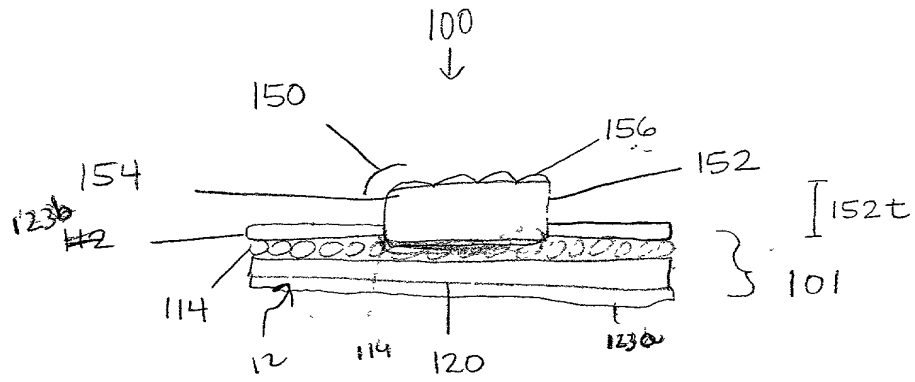


Fig. 2

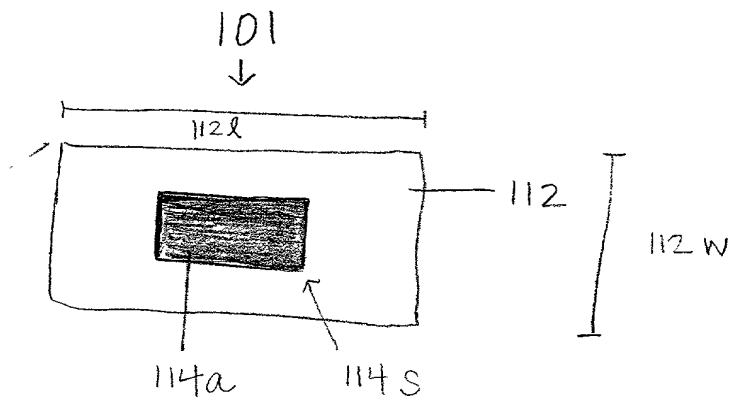


Fig. 3

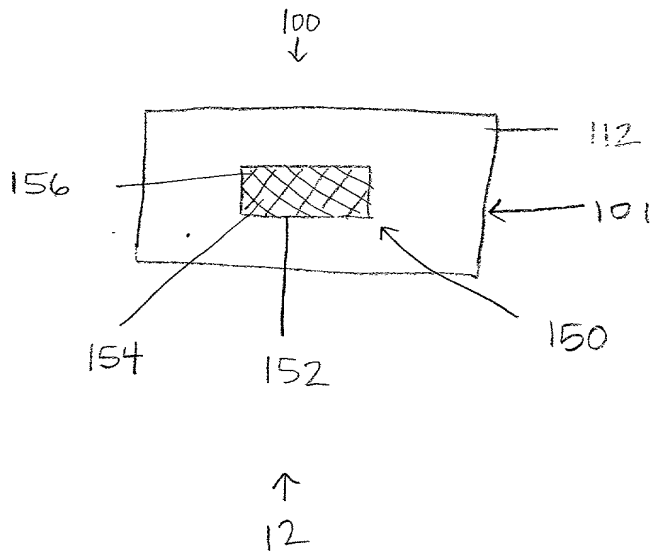


Fig 4

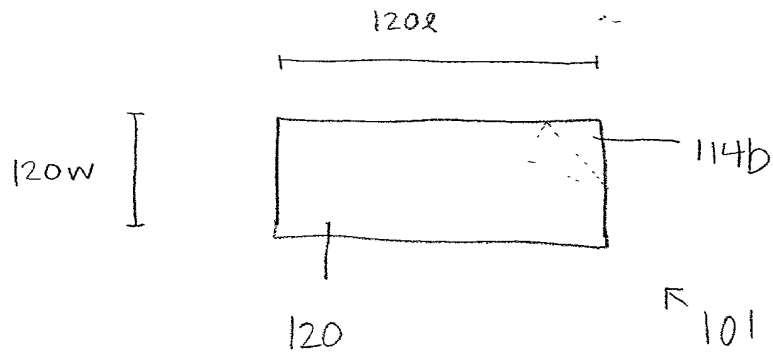


Fig. 5

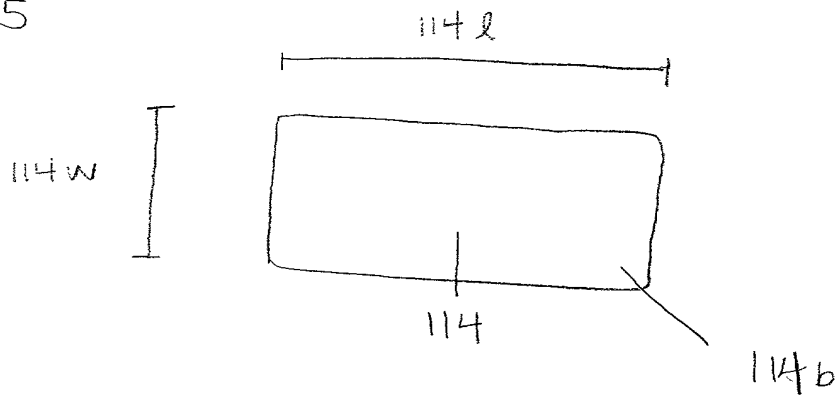


Fig 6

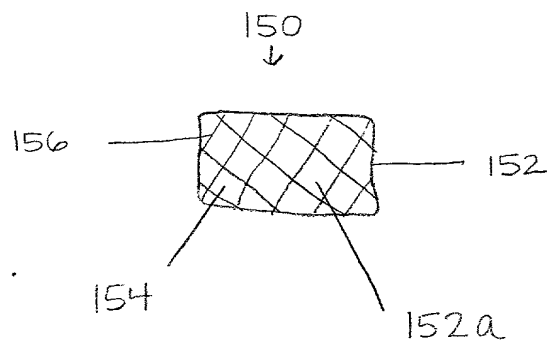
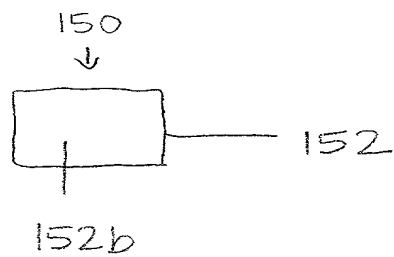


Fig 7



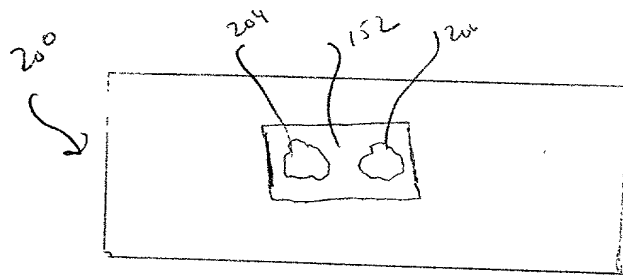


FIG. 8

SCHWEGMAN ■ LUNDBERG ■ WOESSNER ■ KLUTH

United States Patent Application

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: **HYDROGEL VAPOR DISPENSER.**

The specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. § 1.56 (attached hereto). I also acknowledge my duty to disclose all information known to be material to patentability which became available between a filing date of a prior application and the national or PCT international filing date in the event this is a Continuation-In-Part application in accordance with 37 C.F.R. § 1.63(e).

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

No such claim for priority is being made at this time.

I hereby claim the benefit under 35 U.S.C. § 120 or 365(c) of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

No such claim for priority is being made at this time.

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

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Billion, Richard E.	Reg. No. 32,836	Kaufmann, John D.	Reg. No. 24,017	Padys, Danny J.	Reg. No. 35,635
Black, David W.	Reg. No. 42,331	Klima-Silberg, Catherine I.	Reg. No. 40,052	Parker, J. Kevin	Reg. No. 33,024
Brennan, Leoniede M.	Reg. No. 35,832	Kluth, Daniel J.	Reg. No. 32,146	Perdok, Monique M.	Reg. No. 42,989
Brennan, Thomas F.	Reg. No. 35,075	Lacy, Rodney L.	Reg. No. 41,136	Prout, William F.	Reg. No. 33,995
Brooks, Edward J., III	Reg. No. 40,925	Lemaire, Charles A.	Reg. No. 36,198	Schumm, Sherry W.	Reg. No. 39,422
Chu, Dinh C.P.	Reg. No. 41,676	LeMoine, Dana B.	Reg. No. 40,062	Schwegman, Micheal L.	Reg. No. 25,816
Clark, Barbara J.	Reg. No. 38,107	Lundberg, Steven W.	Reg. No. 30,568	Scott, John C.	Reg. No. 38,613
Clise, Timothy B.	Reg. No. 40,957	Maeyaert, Paul L.	Reg. No. 40,076	Smith, Michael G.	Reg. No. 45,368
Dahl, John M.	Reg. No. 44,639	Maki, Peter C.	Reg. No. 42,832	Speier, Gary J.	Reg. No. 45,458
Drake, Eduardo E.	Reg. No. 40,594	Malen, Peter L.	Reg. No. 44,894	Steffey, Charles E.	Reg. No. 25,179
Embretson, Janet E.	Reg. No. 39,665	Mates, Robert E.	Reg. No. 35,271	Terry, Kathleen R.	Reg. No. 31,884
Fordenbacher, Paul J.	Reg. No. 42,546	McCrackin, Ann M.	Reg. No. 42,858	Tong, Viet V.	Reg. No. 45,416
Forrest, Bradley A.	Reg. No. 30,837	Moore, Charles L., Jr.	Reg. No. 33,742	Viksnins, Ann S.	Reg. No. 37,748
Gamon, Owen J.	Reg. No. 36,143	Nama, Kash	Reg. No. 44,255	Woessner, Warren D.	Reg. No. 30,440
Harris, Robert J.	Reg. No. 37,346				

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/organization/who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Schwegman, Lundberg, Woessner & Kluth, P.A. to the contrary.

Please direct all correspondence in this case to **Schwegman, Lundberg, Woessner & Kluth, P.A.** at the address indicated below:

P.O. Box 2938, Minneapolis, MN 55402

Telephone No. (612)373-6900

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of sole inventor :

Mark H. Theno

Citizenship:

United States of America

Residence: **Minnetonka, MN**

Post Office Address:

**13040 Woodbridge Trail
Minnetonka, MN 55305**

Signature: _____

Mark H. Theno

Date: _____

10/17/00

Full Name of inventor:

Citizenship:

Residence:

Post Office Address:

Signature: _____

Date: _____

§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
- (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.